

(12) United States Patent

Stern

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(54)	NASAL CALCITONIN FORMULATIONS			
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(52)	U.S. Cl			
(58)	Field of Search			
(56)		References Cited		
U.S. PATENT DOCUMENTS				
	5,059,587 A	10/1991 Yamamoto et al 514/12		

5,665,700 A	•	9/1997	Cho et al 514/2
6,087,338 A		7/2000	Veronesi et al 514/21
6,149,893 A	+	11/2000	Mardente et al 424/45

OTHER PUBLICATIONS

Dua et al, International Journal of Pharmaceutics 147, 1997—pp. 233-242 "The influence of tonicity and viscosity on the intranasal absorption of salmon calcitonin in rabbits".*

* cited by examiner

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(57) ABSTRACT

A liquid pharmaceutical composition is disclosed comprising calcitonin or an acid addition salt thereof and citric acid or salt thereof in a concentration from about to about 50 mM, said composition being in a form table for nasal administration.

23 Claims, No Drawings